



Full wwPDB EM Validation Report ⓘ

Jul 16, 2025 – 01:44 AM JST

PDB ID : 8Y0E / pdb_00008y0e
EMDB ID : EMD-38802
Title : ASFV RNAP M1249L C-tail occupied complex4 (MCOC4)
Authors : Zhu, G.L.; Zhu, Y.; Zhu, Z.X.; Sun, F.; Zheng, H.X.
Deposited on : 2024-01-22
Resolution : 3.00 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

EMDB validation analysis : **FAILED**
MolProbity : 4-5-2 with Phenix2.0rc1
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : **FAILED**
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.44

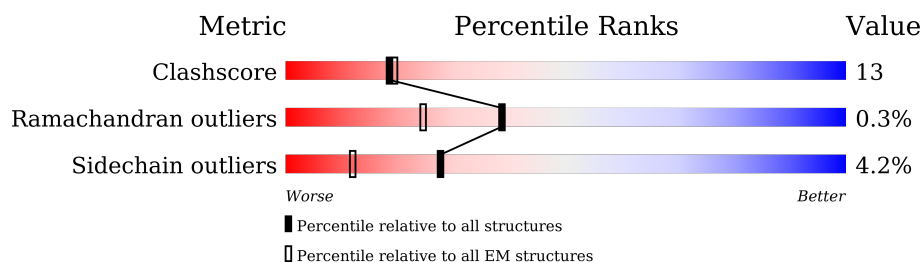
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.00 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$.

Mol	Chain	Length	Quality of chain
1	A	1450	68% 27% . .
2	B	1242	62% 33% . .
3	C	359	74% 25% .
4	D	205	74% 25% .
5	E	147	49% 22% . 27%
6	F	339	44% 24% . 30%
7	G	105	59% 39% .
8	H	80	46% 40% 14%
9	I	1249	12% 6% 81%

2 Entry composition

There are 11 unique types of molecules in this entry. The entry contains 31248 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called DNA-directed RNA polymerase subunit.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1400	Total	C	N	O	S	0	0
			11157	7085	1939	2071	62		

- Molecule 2 is a protein called DNA-directed RNA polymerase subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	1200	Total	C	N	O	S	0	0
			9493	5994	1666	1782	51		

- Molecule 3 is a protein called DNA-directed RNA polymerase RPB3-11 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	358	Total	C	N	O	S	0	0
			2907	1885	481	529	12		

- Molecule 4 is a protein called DNA-directed RNA polymerase RPB5 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	D	205	Total	C	N	O	S	0	0
			1669	1088	278	295	8		

- Molecule 5 is a protein called C147L.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	107	Total	C	N	O	S	0	0
			839	533	144	157	5		

- Molecule 6 is a protein called D339L.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	237	Total	C	N	O	S	0	0
			1906	1226	315	354	11		

- Molecule 7 is a protein called C122R.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	105	Total	C	N	O	S	0	0
			816	507	141	153	15		

- Molecule 8 is a protein called DNA-directed RNA polymerase RPB10 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	69	Total	C	N	O	S	0	0
			553	362	89	95	7		

- Molecule 9 is a protein called M1249L.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	I	239	Total	C	N	O	S	0	0
			1901	1221	301	371	8		

- Molecule 10 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
10	A	2	Total	Zn	0
			2	2	
10	B	1	Total	Zn	0
			1	1	
10	G	2	Total	Zn	0
			2	2	
10	H	1	Total	Zn	0
			1	1	

- Molecule 11 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

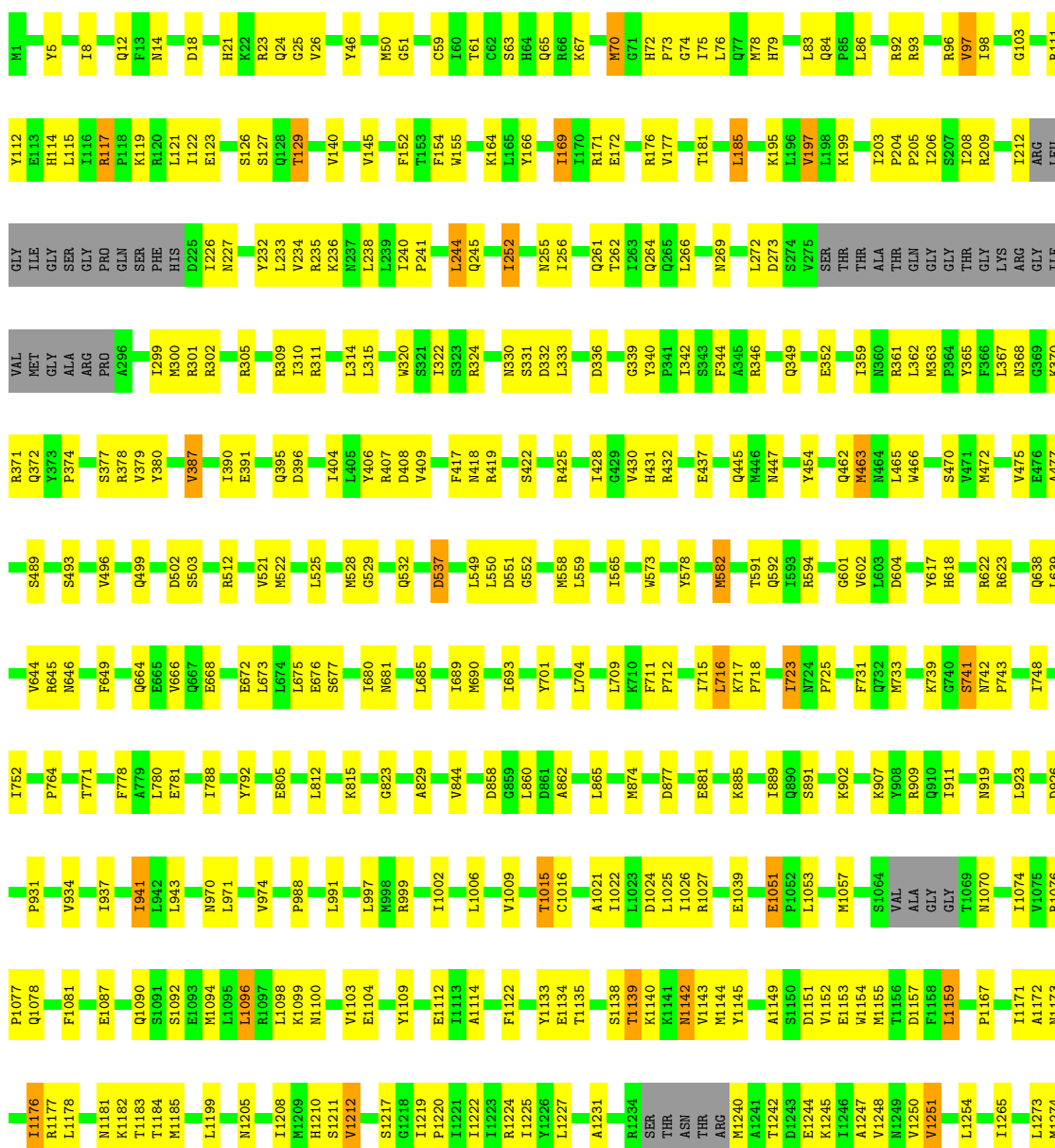
Mol	Chain	Residues	Atoms		AltConf
11	A	1	Total	Mg	0
			1	1	

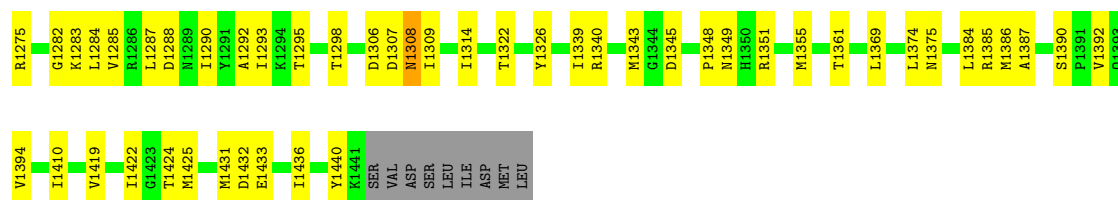
3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: DNA-directed RNA polymerase subunit

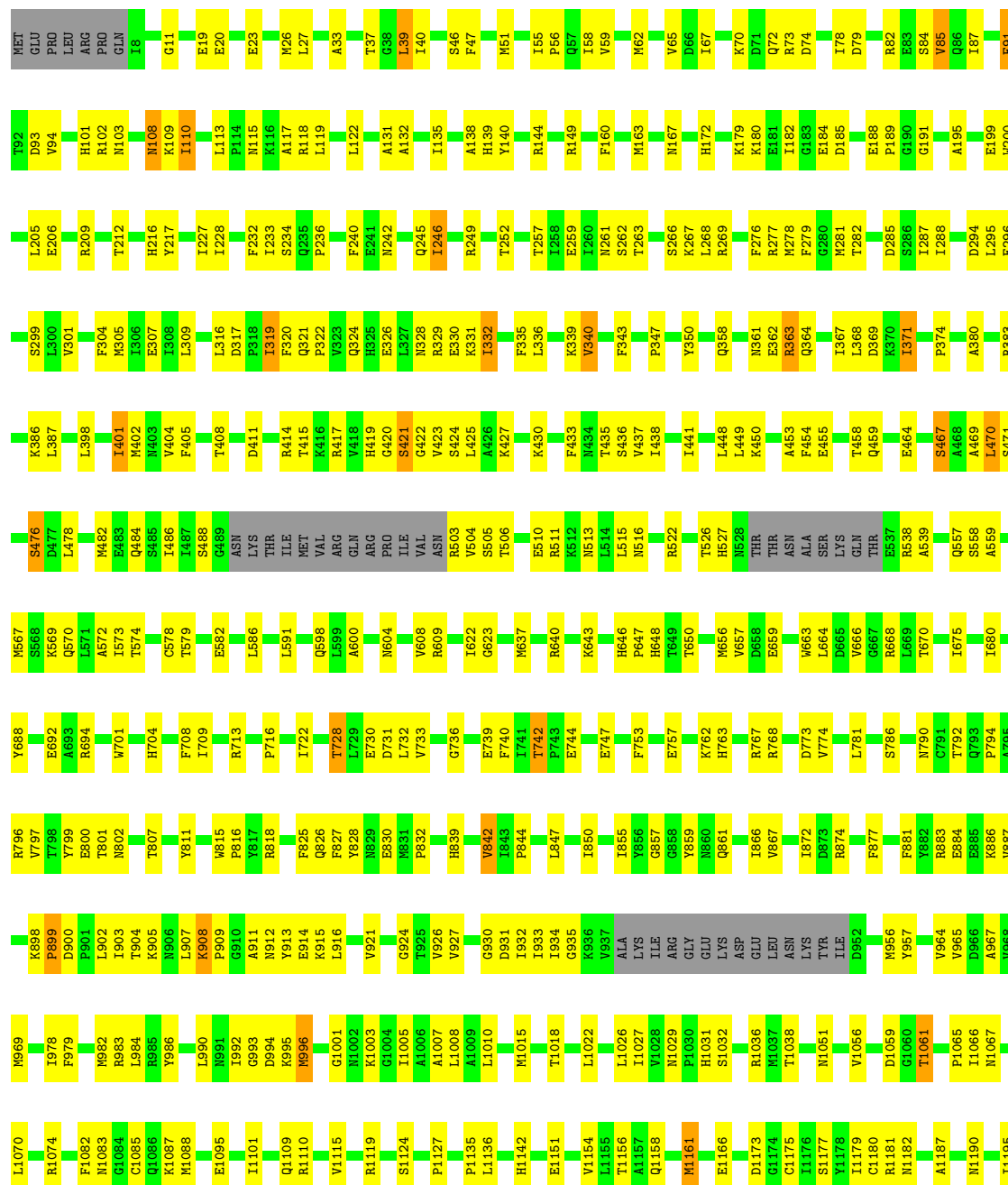
Chain A: 



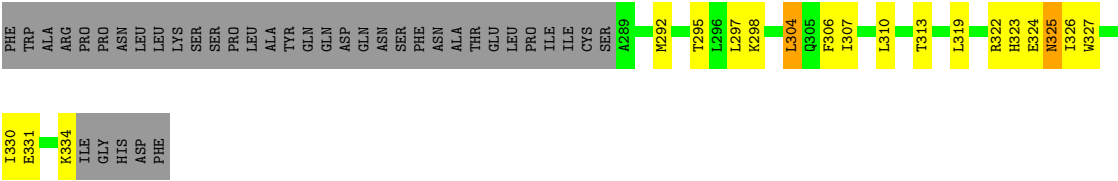


• Molecule 2: DNA-directed RNA polymerase subunit beta

Chain B: 62% 33%



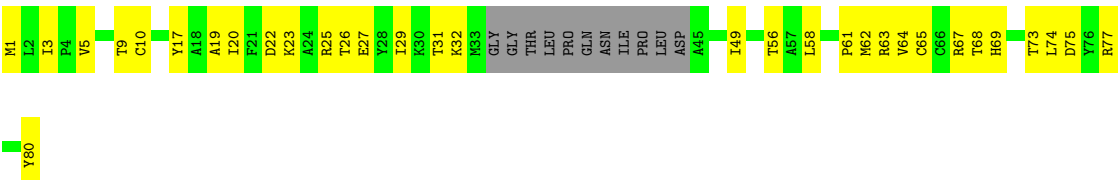




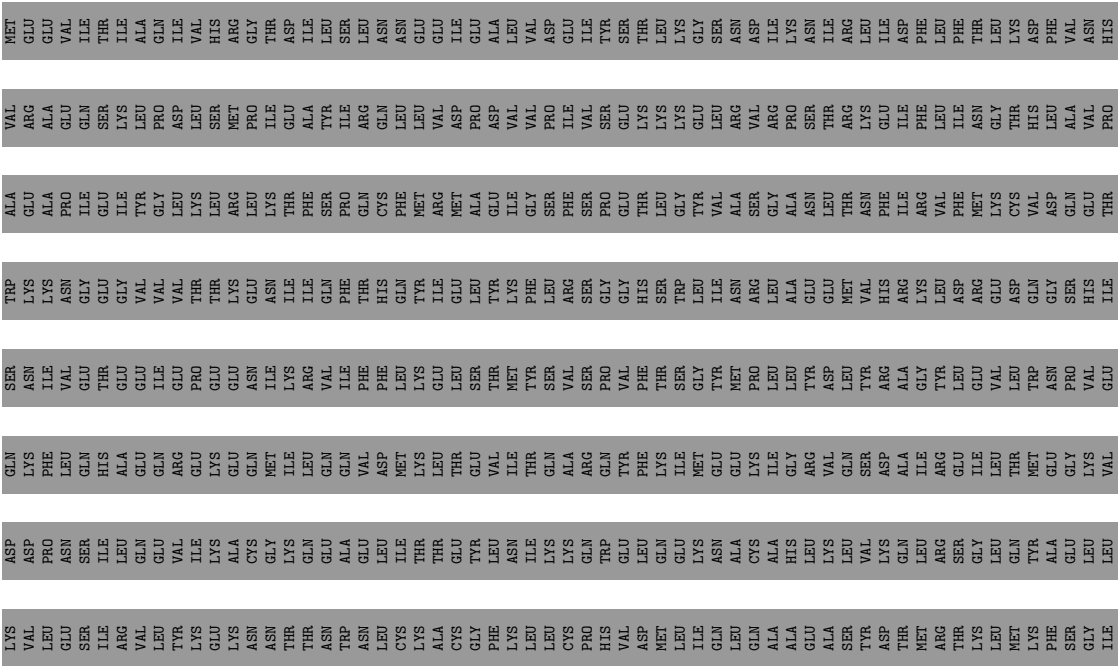
• Molecule 7: C122R



• Molecule 8: DNA-directed RNA polymerase RPB10 homolog



• Molecule 9: M1249L



E1284	S1143	Tyr	Cys	Tyr	Ala	Arg	His	Asn	His	Asn
D1235	I1142	Asp	His	Lys	Tyr	Thr	Pro	Gln	Phe	Lys
V1236	E1143	His	Val	Arg	Leu	Arg	Ala	Asn	Gly	Glu
D1237		Leu	Leu	Leu	Phe	Leu	Ala	Gly	Lys	Lys
I1238	F1149	Ser	Gln	Pro	Leu	Leu	Leu	Thr	Val	Glu
S1239	L1150	Gln	His	Ile	Leu	Leu	Leu	Ile	Asn	Asn
L1240	T1151	Pro	Glu	Ser	Lys	Leu	Leu	Gly	Asp	Gln
D1241		Glu	Val	Thr	Tyr	Ser	Ser	Leu	Val	Asn
V1242	I1155	Leu	Gln	Thr	Tyr	Leu	Gln	Leu	Val	Gln
L1243	P1158	Val	Leu	Tyr	Gln	Leu	Val	Ser	Lys	Gly
D1244	S1159	His	Leu	Asp	Asn	Asp	Glu	Gly	Ile	Ile
N1245	W1160	Asp	Asn	Arg	Pro	Ala	Tyr	Thr	Ala	Tyr
L1246	V1161	Tyr	Lys	Gly	Asn	Asn	Lys	Thr	Lys	Ser
Q1249	V1162	Tyr	Lys	Lys	Asn	Asn	Asp	Thr	Ile	Tyr
	A1169	Asn	Val	Leu	Phe	Phe	Lys	Lys	Ala	Phe
	L1170	Asn	Gln	Pro	Val	Ile	Ile	Val	Val	Cys
	T1171	Tyr	Gln	His	Ser	Lys	Tyr	Leu	Asn	Lys
E1172	R1065	Lys	Ala	Trp	Leu	Thr	Leu	Thr	Asn	Ile
L1173	L1086	Leu	Lys	Thr	Ala	Ile	Ala	Glu	Ala	Ala
A1068	M1067	Lys	Ala	Ile	Phe	Tyr	Phe	Leu	Val	Pro
N1174	A1068	Asp	Ala	Tyr	Val	Val	Val	Leu	Val	Leu
T1175	V1069	Lys	Ser	Val	Lys	Val	Lys	Leu	Thr	Val
	D1070	Glu	Leu	Tyr	Tyr	Tyr	Asp	Phe	Tyr	Ala
K1181		Lys	Glu	Lys	Lys	Lys	Asp	Pro	Ser	His
L1182	R1074	Met	Phe	Ala	Ala	Ala	Leu	Met	Ile	Phe
	I1075	Ser	Asn	Val	Val	Val	Asn	Leu	Glu	Ile
	F1076	Ile	Thr	Asp	Asp	Ala	Ala	Asp	Gln	Glu
	L1077	Arg	Phe	Ser	Ser	Gly	Arg	Met	Lys	Gly
			Tyr	Tyr	Tyr	Glu	Leu	Gln	Lys	Arg
M1192	Y1080	Ile	Ala	Gln	Lys	Gln	Leu	Asn	Lys	Thr
I1193	M1081	Lys	Phe	Lys	Pro	Lys	Asp	Gln	Glu	Ala
F1194	C1082	Ile	Tyr	Tyr	Ala	Ala	Ile	Val	Leu	Ala
G1195		Lys	Glu	Glu	Ala	Leu	Arg	Gly	Tyr	Val
E1196		Lys	Ser	Leu	Leu	Leu	Phe	Ile	Asp	Gly
D1197	V1086	Asp	Arg	Ile	Ile	Ala	Gln	Asp	Pro	Ile
F1198	S1087	Met	Cys	Glu	Val	Gln	Glu	Gly	Leu	Ile
	T1088	Thr	Pro	Val	Val	Gln	Val	Gly	Leu	Ile
S1201	F1089	Thr	Pro	Val	Val	Gln	Val	Gly	Leu	Ile
G1202		Thr	Lys	Thr	Thr	Gln	Arg	Ser	Thr	Gly
E1203	P1092	Pro	Gly	Arg	Arg	Gln	Gly	Ile	Leu	Asp
D1204		Ser	Gly	Lys	Lys	Phe	Phe	Ile	Gln	Asn
S1205	V1100	Thr	Leu	Asp	Asp	Tyr	Arg	Met	Glu	Tyr
S1206	K1101	Glu	His	Val	Ile	Asn	Val	Ile	Ala	Ser
M1207	H1102	Thr	Asp	Lys	Thr	Gly	Arg	Thr	Val	Lys
D1208	L1103	Gln	Phe	Lys	Lys	Phe	Trp	Lys	Val	Lys
D1209	E1112	Pro	Gln	Lys	Lys	Asp	Trp	Pro	Ile	Leu
A1212	K1113	Lys	Val	Asp	Asp	Thr	Arg	His	Val	Leu
Y1213	V1114	Pro	Lys	Asn	Asn	Thr	Val	Asn	Val	Leu
	L1115	Gln	Cys	His	Gly	Gly	Arg	Ala	Ala	Asn
F1219	P1116	Leu	Val	Tyr	Arg	Arg	Glu	Ala	Asn	Ile
			Lys	Ala	Ala	Lys	Glu	Ala	Asn	Ile
D1222	V1119	Lys	Cys	Ala	Asp	Lys	Leu	Phe	Phe	Leu
I1223		Gly	Gly	Ala	Arg	Arg	Thr	Arg	Leu	Met
	Y1122	Leu	Leu	Asp	Arg	Thr	Thr	Phe	Lys	Lys
D1228	H1123	Phe	Thr	Leu	Arg	Thr	Leu	Ala	Tyr	Ala
			Tyr	Arg	Leu	Ile	Thr	Lys	Ser	Cys
F1231	V1131	Thr	Tyr	Cys	Leu	Thr	Val	Lys	Ser	Thr
S1232		Ile	Ile	Ser	Phe	Thr	Val	Lys	Gln	Phe
I1233	Y1140	Lys	Lys	Val	Glu	Arg	Gly	Ile	Lys	Lys

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	65385	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	60	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, MG

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# $ Z > 5$	RMSZ	# $ Z > 5$
1	A	0.24	0/11373	0.33	0/15402
2	B	0.24	0/9684	0.39	2/13104 (0.0%)
3	C	0.25	0/2969	0.37	0/4012
4	D	0.21	0/1708	0.36	0/2311
5	E	0.24	0/851	0.37	0/1151
6	F	0.16	0/1936	0.38	1/2616 (0.0%)
7	G	0.22	0/828	0.46	0/1109
8	H	0.25	0/563	0.38	0/758
9	I	0.16	0/1947	0.34	0/2648
All	All	0.23	0/31859	0.36	3/43111 (0.0%)

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
2	B	899	PRO	CA-N-CD	-12.44	94.58	112.00
2	B	899	PRO	N-CD-CG	-6.37	93.64	103.20
6	F	143	PRO	CA-N-CD	-5.50	104.30	112.00

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	11157	0	11278	275	0
2	B	9493	0	9426	313	0
3	C	2907	0	2982	67	0
4	D	1669	0	1713	26	0
5	E	839	0	883	25	0
6	F	1906	0	1943	57	0
7	G	816	0	813	33	0
8	H	553	0	580	27	0
9	I	1901	0	1860	67	0
10	A	2	0	0	0	0
10	B	1	0	0	0	0
10	G	2	0	0	0	0
10	H	1	0	0	0	0
11	A	1	0	0	0	0
All	All	31248	0	31478	800	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 13.

All (800) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:353:ASN:O	3:C:357:LEU:HB2	1.79	0.82
8:H:17:TYR:HB3	8:H:58:LEU:HD22	1.61	0.81
1:A:1074:ILE:HG22	1:A:1078:GLN:HG3	1.63	0.81
2:B:205:LEU:HG	2:B:505:SER:HB2	1.65	0.79
4:D:49:ASN:O	4:D:49:ASN:ND2	2.17	0.77
2:B:281:MET:HB3	9:I:1067:MET:HG3	1.69	0.75
3:C:65:GLU:OE1	3:C:249:ARG:NH2	2.18	0.75
4:D:42:ARG:NH2	4:D:85:TYR:OH	2.19	0.74
2:B:294:ASP:OD2	2:B:609:ARG:NH1	2.20	0.74
2:B:1051:ASN:OD1	2:B:1074:ARG:NH2	2.20	0.73
2:B:227:ILE:HG22	2:B:228:ILE:H	1.50	0.73
1:A:92:ARG:HH11	1:A:96:ARG:HH21	1.37	0.72
2:B:115:ASN:ND2	2:B:182:ILE:O	2.22	0.72
6:F:91:LYS:HZ3	6:F:105:LEU:H	1.37	0.72
4:D:37:ASN:OD1	4:D:38:THR:N	2.23	0.72
1:A:301:ARG:HH22	1:A:305:ARG:HB2	1.55	0.71
2:B:411:ASP:OD1	2:B:538:ARG:NH2	2.23	0.71
2:B:967:ALA:HB3	2:B:983:ARG:H	1.54	0.71
7:G:11:MET:HE3	7:G:24:CYS:HB2	1.72	0.71
2:B:367:ILE:O	2:B:371:ILE:HB	1.91	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:637:MET:HE3	2:B:637:MET:HA	1.72	0.70
1:A:493:SER:OG	1:A:1349:ASN:ND2	2.23	0.70
1:A:311:ARG:HH22	9:I:1235:ASP:HA	1.56	0.70
1:A:301:ARG:O	1:A:301:ARG:NE	2.18	0.70
1:A:646:ASN:ND2	2:B:1095:GLU:OE1	2.20	0.69
7:G:49:MET:HE2	7:G:49:MET:HA	1.74	0.69
2:B:924:GLY:N	2:B:965:VAL:O	2.24	0.69
2:B:899:PRO:O	2:B:899:PRO:HD2	1.92	0.69
2:B:558:SER:O	2:B:802:ASN:ND2	2.25	0.68
2:B:329:ARG:HA	2:B:332:ILE:HD12	1.75	0.68
4:D:29:ASP:O	4:D:33:GLN:HG2	1.93	0.68
1:A:502:ASP:OD2	2:B:1029:ASN:ND2	2.22	0.68
2:B:70:LYS:HE3	9:I:1192:MET:HA	1.73	0.68
1:A:1114:ALA:HB2	1:A:1293:ILE:HG21	1.74	0.68
4:D:192:MET:O	4:D:193:HIS:ND1	2.26	0.68
4:D:22:LEU:HD23	4:D:44:ASN:HB3	1.75	0.68
1:A:395:GLN:NE2	1:A:396:ASP:OD1	2.26	0.68
2:B:19:GLU:OE2	2:B:19:GLU:N	2.24	0.68
2:B:163:MET:HE2	2:B:191:GLY:HA2	1.75	0.67
3:C:253:ILE:HA	3:C:256:ILE:HD12	1.75	0.67
1:A:1087:GLU:N	1:A:1087:GLU:OE2	2.27	0.67
1:A:1092:SER:HG	1:A:1298:THR:HG1	1.40	0.67
1:A:1205:ASN:HB2	1:A:1231:ALA:HB2	1.77	0.67
8:H:10:CYS:SG	8:H:63:ARG:NH1	2.68	0.67
2:B:567:MET:HE3	2:B:567:MET:HA	1.75	0.67
2:B:586:LEU:HD23	2:B:664:LEU:HD11	1.76	0.67
2:B:70:LYS:NZ	9:I:1194:PHE:O	2.28	0.67
2:B:916:LEU:HD22	2:B:935:GLY:H	1.59	0.67
1:A:1208:ILE:HD12	1:A:1225:ILE:HG22	1.77	0.66
9:I:1037:ILE:HG22	9:I:1069:VAL:HG22	1.77	0.66
2:B:1018:THR:HG22	2:B:1088:MET:HG2	1.77	0.66
1:A:93:ARG:HD2	1:A:121:LEU:HG	1.77	0.66
6:F:324:GLU:HG2	6:F:327:TRP:HD1	1.60	0.66
1:A:431:HIS:NE2	1:A:454:TYR:OH	2.23	0.66
1:A:1245:LYS:HE3	1:A:1245:LYS:HA	1.77	0.66
5:E:83:ARG:HD3	5:E:116:PRO:HD2	1.78	0.66
2:B:277:ARG:HB2	2:B:282:THR:HG22	1.78	0.66
1:A:1432:ASP:OD2	5:E:139:ARG:NH2	2.28	0.66
1:A:232:TYR:HB3	1:A:266:LEU:HD21	1.77	0.66
9:I:1170:LEU:O	9:I:1174:ASN:ND2	2.29	0.66
2:B:990:LEU:HD21	2:B:996:MET:HE1	1.78	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:2:LYS:HD3	7:G:30:VAL:HG21	1.79	0.65
1:A:1138:SER:O	1:A:1140:LYS:N	2.29	0.65
2:B:830:GLU:HG3	2:B:847:LEU:HA	1.78	0.65
2:B:228:ILE:HG21	2:B:401:ILE:HG12	1.78	0.65
3:C:257:TYR:HE1	3:C:336:LEU:HB2	1.61	0.65
4:D:42:ARG:NE	4:D:44:ASN:OD1	2.30	0.65
9:I:1114:VAL:HG11	9:I:1161:VAL:HG11	1.77	0.65
1:A:166:TYR:H	1:A:169:ILE:HD12	1.62	0.65
2:B:994:ASP:OD2	2:B:1110:ARG:NH2	2.30	0.65
2:B:321:GLN:OE1	2:B:324:GLN:NE2	2.30	0.64
9:I:1080:TYR:OH	9:I:1116:PRO:O	2.12	0.64
1:A:578:TYR:HE1	1:A:742:ASN:HD21	1.46	0.64
2:B:216:HIS:ND1	2:B:217:TYR:O	2.30	0.64
1:A:1419:VAL:HG13	1:A:1425:MET:HE1	1.80	0.64
2:B:206:GLU:OE1	2:B:569:LYS:NZ	2.30	0.64
4:D:71:MET:HE3	4:D:75:LEU:HG	1.80	0.64
1:A:889:ILE:HG22	1:A:891:SER:H	1.62	0.64
2:B:404:VAL:HG13	7:G:52:LYS:HG3	1.80	0.64
6:F:46:LEU:HD11	6:F:79:SER:HB3	1.79	0.64
9:I:1086:VAL:HG11	9:I:1100:VAL:HG11	1.79	0.63
1:A:1182:LYS:HA	1:A:1185:MET:HB2	1.79	0.63
2:B:728:THR:OG1	2:B:730:GLU:OE1	2.15	0.63
9:I:1047:ASP:HB3	9:I:1052:GLN:HE22	1.63	0.63
2:B:113:LEU:HD22	2:B:182:ILE:HD11	1.80	0.63
2:B:522:ARG:NH2	2:B:572:ALA:O	2.31	0.63
6:F:31:LEU:HD11	6:F:72:VAL:HG11	1.79	0.63
9:I:1056:PRO:O	9:I:1065:ARG:NH2	2.31	0.63
3:C:96:ARG:NH2	3:C:148:GLU:O	2.22	0.63
1:A:363:MET:HE3	1:A:363:MET:HA	1.81	0.63
2:B:877:PHE:O	2:B:1110:ARG:NH1	2.30	0.63
2:B:73:ARG:HH22	2:B:453:ALA:HA	1.64	0.62
2:B:722:ILE:HD11	2:B:732:LEU:HD11	1.81	0.62
2:B:510:GLU:O	2:B:516:ASN:ND2	2.32	0.62
1:A:690:MET:HE2	1:A:690:MET:HA	1.79	0.62
2:B:902:LEU:HD23	2:B:902:LEU:H	1.63	0.62
2:B:1212:SER:OG	2:B:1213:ARG:N	2.29	0.62
1:A:430:VAL:HG21	1:A:477:ALA:HB1	1.80	0.62
1:A:377:SER:HA	1:A:390:ILE:HB	1.81	0.62
1:A:1098:LEU:HB2	1:A:1104:GLU:HB3	1.82	0.62
3:C:276:LYS:HG2	3:C:326:LYS:HD2	1.80	0.62
2:B:650:THR:HB	2:B:663:TRP:HB2	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:622:ILE:HD12	2:B:622:ILE:O	2.01	0.61
1:A:1386:MET:HG2	1:A:1394:VAL:HG23	1.81	0.61
1:A:1425:MET:HE3	6:F:61:ARG:HG2	1.81	0.61
1:A:1440:TYR:OH	5:E:83:ARG:NH2	2.33	0.61
2:B:467:SER:O	2:B:471:SER:OG	2.18	0.61
2:B:600:ALA:HB1	9:I:1060:SER:HB2	1.83	0.61
7:G:19:ASN:OD1	7:G:20:ILE:N	2.33	0.61
2:B:482:MET:HA	2:B:482:MET:HE3	1.83	0.61
1:A:23:ARG:HH11	5:E:43:PRO:HG3	1.65	0.61
1:A:74:GLY:O	1:A:203:ILE:N	2.33	0.61
2:B:437:VAL:HG22	2:B:470:LEU:HD11	1.83	0.61
3:C:230:HIS:HB3	3:C:233:GLN:HE21	1.66	0.61
9:I:1077:LEU:HD13	9:I:1119:VAL:HG13	1.83	0.60
1:A:1343:MET:HA	1:A:1343:MET:HE2	1.82	0.60
1:A:489:SER:HB2	1:A:496:VAL:HG13	1.83	0.60
1:A:84:GLN:NE2	1:A:195:LYS:O	2.34	0.60
1:A:98:ILE:HD13	1:A:177:VAL:HG22	1.83	0.60
3:C:326:LYS:HE2	3:C:326:LYS:HA	1.83	0.60
7:G:17:ASP:OD1	7:G:18:GLY:N	2.34	0.60
1:A:551:ASP:OD1	1:A:552:GLY:N	2.34	0.60
1:A:1159:LEU:HD11	1:A:1167:PRO:HD3	1.83	0.60
9:I:1193:ILE:HD12	9:I:1193:ILE:H	1.67	0.60
3:C:180:VAL:HG22	3:C:222:CYS:HB3	1.83	0.60
1:A:380:TYR:HB3	1:A:404:ILE:HB	1.83	0.60
2:B:140:TYR:HB2	2:B:144:ARG:HB2	1.84	0.60
1:A:1227:LEU:HD11	1:A:1250:VAL:HG11	1.84	0.60
2:B:85:VAL:HG11	2:B:449:LEU:HD11	1.84	0.60
3:C:96:ARG:NH1	8:H:3:ILE:O	2.28	0.60
1:A:693:ILE:HD12	1:A:693:ILE:H	1.67	0.59
1:A:367:LEU:O	1:A:371:ARG:NH2	2.35	0.59
2:B:792:THR:HG23	2:B:1038:THR:HA	1.84	0.59
2:B:797:VAL:O	2:B:801:THR:HG23	2.03	0.59
2:B:902:LEU:HG	2:B:903:ILE:HG12	1.85	0.59
2:B:904:THR:HG23	2:B:907:LEU:HD22	1.85	0.59
2:B:915:LYS:NZ	2:B:931:ASP:OD2	2.28	0.59
1:A:97:VAL:HG11	1:A:185:LEU:HD21	1.85	0.59
1:A:324:ARG:NH1	1:A:462:GLN:OE1	2.36	0.59
2:B:233:ILE:HD13	2:B:245:GLN:HB2	1.85	0.59
2:B:934:ILE:HD12	2:B:934:ILE:O	2.03	0.59
1:A:877:ASP:OD2	1:A:902:LYS:NZ	2.35	0.59
1:A:1096:LEU:HD22	1:A:1314:ILE:HD12	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:592:GLN:HE21	1:A:594:ARG:HG3	1.67	0.58
1:A:1275:ARG:HB2	1:A:1290:ILE:HD12	1.84	0.58
9:I:1204:ASP:OD1	9:I:1206:SER:OG	2.20	0.58
1:A:78:MET:HE1	1:A:233:LEU:HD11	1.85	0.58
1:A:322:ILE:HG13	1:A:466:TRP:HB3	1.85	0.58
2:B:881:PHE:HB3	2:B:986:TYR:HB2	1.86	0.58
8:H:69:HIS:O	8:H:73:THR:OG1	2.20	0.58
1:A:1176:ILE:HG23	1:A:1225:ILE:HG13	1.85	0.58
2:B:167:ASN:HA	2:B:172:HIS:CG	2.39	0.58
2:B:844:PRO:HD2	8:H:74:LEU:HD11	1.84	0.58
3:C:305:ILE:HD11	3:C:323:ILE:HG23	1.85	0.58
4:D:107:VAL:HG12	4:D:110:ARG:HH21	1.69	0.58
4:D:58:PHE:O	4:D:123:TYR:OH	2.22	0.58
2:B:278:MET:HE1	2:B:336:LEU:HD22	1.86	0.58
3:C:148:GLU:HG3	8:H:19:ALA:HB2	1.86	0.58
2:B:825:PHE:HE2	8:H:1:MET:HE2	1.69	0.58
2:B:1083:ASN:ND2	2:B:1085:CYS:SG	2.77	0.58
1:A:681:ASN:ND2	1:A:780:LEU:O	2.35	0.58
1:A:681:ASN:OD1	1:A:701:TYR:OH	2.16	0.58
5:E:113:ARG:NH1	5:E:139:ARG:O	2.36	0.58
1:A:209:ARG:NH1	1:A:227:ASN:OD1	2.35	0.57
1:A:1225:ILE:HD12	1:A:1254:LEU:HD13	1.85	0.57
2:B:72:GLN:HG2	2:B:82:ARG:HG2	1.86	0.57
2:B:866:ILE:HG23	2:B:1008:LEU:HB3	1.85	0.57
3:C:110:VAL:H	3:C:134:ALA:HB3	1.69	0.57
3:C:256:ILE:O	3:C:264:GLN:NE2	2.38	0.57
7:G:6:ALA:O	9:I:1123:HIS:NE2	2.33	0.57
1:A:352:GLU:OE1	1:A:361:ARG:NH2	2.29	0.57
1:A:1210:HIS:ND1	1:A:1211:SER:O	2.35	0.57
2:B:753:PHE:CE2	2:B:757:GLU:HG3	2.39	0.57
3:C:227:PRO:HG2	3:C:230:HIS:HB2	1.86	0.57
2:B:55:ILE:O	2:B:59:VAL:HG23	2.05	0.57
1:A:418:ASN:HB2	1:A:428:ILE:HG12	1.86	0.57
2:B:1059:ASP:OD1	2:B:1061:THR:OG1	2.22	0.57
2:B:11:GLY:O	2:B:713:ARG:NH1	2.38	0.57
2:B:276:PHE:HB3	2:B:287:ILE:HD12	1.87	0.57
1:A:241:PRO:HG2	1:A:244:LEU:HG	1.87	0.56
6:F:145:ARG:NH1	6:F:146:GLN:OE1	2.37	0.56
1:A:342:ILE:HD12	1:A:437:GLU:HG2	1.86	0.56
1:A:970:ASN:O	1:A:1027:ARG:NH2	2.37	0.56
2:B:135:ILE:HG13	2:B:149:ARG:HG2	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:688:TYR:O	2:B:692:GLU:HG2	2.05	0.56
1:A:333:LEU:O	1:A:447:ASN:ND2	2.38	0.56
2:B:317:ASP:N	2:B:324:GLN:OE1	2.38	0.56
1:A:1144:MET:HG2	1:A:1149:ALA:HA	1.88	0.56
1:A:310:ILE:HA	1:A:314:LEU:HD12	1.85	0.56
2:B:268:LEU:HD23	2:B:340:VAL:HG12	1.88	0.56
2:B:363:ARG:NH2	9:I:1201:SER:O	2.39	0.56
1:A:1361:THR:O	4:D:198:ARG:NH2	2.37	0.56
1:A:1133:TYR:OH	7:G:17:ASP:O	2.11	0.56
2:B:199:GLU:OE2	2:B:818:ARG:NH1	2.37	0.56
2:B:1201:CYS:O	2:B:1203:VAL:N	2.39	0.56
3:C:70:MET:HE2	3:C:176:PHE:CZ	2.41	0.56
5:E:97:LYS:HD2	5:E:98:LYS:N	2.21	0.56
6:F:14:ASP:HA	6:F:67:ARG:HG2	1.87	0.56
6:F:139:VAL:HG13	6:F:150:ALA:HB2	1.88	0.56
9:I:1019:LYS:HG2	9:I:1150:LEU:HD21	1.88	0.56
2:B:424:SER:HB3	2:B:504:VAL:HA	1.86	0.55
2:B:648:HIS:O	2:B:668:ARG:NH1	2.34	0.55
9:I:1089:PHE:HB2	9:I:1092:PRO:HG3	1.88	0.55
2:B:827:PHE:O	8:H:1:MET:N	2.35	0.55
5:E:122:CYS:HB2	5:E:133:VAL:HG12	1.89	0.55
2:B:768:ARG:NH1	7:G:68:GLN:OE1	2.32	0.55
6:F:174:GLN:N	6:F:174:GLN:HE21	2.04	0.55
1:A:422:SER:HB3	2:B:1154:VAL:HG21	1.89	0.55
1:A:21:HIS:HB3	1:A:75:ILE:HD12	1.88	0.55
1:A:92:ARG:HH11	1:A:96:ARG:NH2	2.03	0.55
1:A:352:GLU:HG3	1:A:407:ARG:HE	1.71	0.55
2:B:47:PHE:CZ	2:B:51:MET:HE3	2.41	0.55
3:C:193:PRO:HG2	3:C:196:LYS:HD3	1.88	0.55
5:E:115:ILE:O	5:E:139:ARG:NH1	2.40	0.55
1:A:475:VAL:HG22	5:E:103:ILE:HG23	1.89	0.55
2:B:420:GLY:O	2:B:422:GLY:N	2.38	0.55
2:B:319:ILE:HD11	2:B:339:LYS:HD3	1.88	0.55
2:B:579:THR:HA	2:B:666:VAL:HG23	1.89	0.54
6:F:4:GLN:HA	6:F:77:VAL:HA	1.89	0.54
1:A:1142:ASN:HD21	1:A:1144:MET:HB2	1.72	0.54
2:B:866:ILE:HB	2:B:1027:ILE:HB	1.87	0.54
1:A:377:SER:O	1:A:378:ARG:NH1	2.41	0.54
1:A:805:GLU:HG2	2:B:794:PRO:HB3	1.88	0.54
2:B:227:ILE:HD11	2:B:252:THR:HA	1.90	0.54
6:F:192:ARG:HG3	6:F:200:ILE:HD13	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:419:ARG:HG3	1:A:463:MET:HG2	1.90	0.54
1:A:522:MET:HB3	3:C:210:MET:HB3	1.90	0.54
2:B:898:LYS:HG2	2:B:899:PRO:HD3	1.89	0.54
1:A:164:LYS:HD2	1:A:166:TYR:CE1	2.43	0.54
1:A:1422:ILE:HG13	2:B:1161:MET:HE2	1.90	0.54
2:B:84:SER:O	2:B:139:HIS:N	2.35	0.54
2:B:262:SER:O	2:B:266:SER:OG	2.25	0.54
3:C:101:PRO:HD2	3:C:147:PHE:CZ	2.43	0.54
3:C:138:LEU:HD13	3:C:141:PRO:HA	1.90	0.54
1:A:926:ASP:OD1	1:A:926:ASP:N	2.38	0.54
2:B:78:ILE:HG22	2:B:82:ARG:HH21	1.73	0.54
2:B:108:ASN:N	2:B:108:ASN:OD1	2.40	0.54
2:B:921:VAL:HG21	2:B:933:ILE:HG22	1.90	0.54
6:F:91:LYS:N	6:F:91:LYS:HD2	2.23	0.54
1:A:1134:GLU:HB3	7:G:37:LEU:HD23	1.90	0.53
1:A:1419:VAL:CG1	1:A:1425:MET:HE1	2.37	0.53
2:B:826:GLN:NE2	2:B:828:TYR:O	2.38	0.53
8:H:62:MET:HE2	8:H:62:MET:HA	1.90	0.53
2:B:786:SER:HB2	2:B:800:GLU:HG2	1.90	0.53
2:B:933:ILE:HB	2:B:982:MET:HE3	1.91	0.53
3:C:12:PRO:HA	3:C:41:VAL:HA	1.90	0.53
1:A:1145:TYR:CE2	7:G:38:LEU:HB2	2.43	0.53
2:B:993:GLY:HA2	2:B:1005:ILE:HG23	1.90	0.53
6:F:111:THR:OG1	6:F:147:GLN:NE2	2.37	0.53
2:B:926:VAL:HG22	2:B:964:VAL:HG22	1.90	0.53
2:B:288:ILE:HG22	2:B:295:LEU:HD21	1.91	0.53
3:C:20:LEU:HD22	3:C:20:LEU:H	1.73	0.53
1:A:18:ASP:OD2	1:A:199:LYS:N	2.33	0.53
1:A:346:ARG:NH2	1:A:372:GLN:O	2.42	0.53
1:A:499:GLN:HB3	1:A:503:SER:HB2	1.91	0.53
1:A:1273:LEU:HD11	1:A:1292:ALA:HB3	1.91	0.53
1:A:673:LEU:HD21	1:A:712:PRO:HD3	1.91	0.53
4:D:6:LEU:O	4:D:10:ILE:HG22	2.07	0.53
2:B:573:ILE:HG23	2:B:574:THR:HG23	1.90	0.53
2:B:216:HIS:HB3	9:I:1219:PHE:CE2	2.44	0.53
2:B:417:ARG:NH1	2:B:744:GLU:OE2	2.41	0.53
4:D:64:TYR:CZ	4:D:74:LEU:HD12	2.44	0.53
1:A:752:ILE:HB	1:A:788:ILE:HB	1.90	0.53
2:B:46:SER:OG	2:B:421:SER:OG	2.25	0.53
7:G:54:LYS:HA	7:G:54:LYS:HE2	1.91	0.53
1:A:332:ASP:OD2	2:B:859:TYR:OH	2.23	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:61:PRO:HG2	8:H:63:ARG:HD2	1.91	0.52
1:A:417:PHE:CZ	1:A:463:MET:HE2	2.45	0.52
3:C:236:ARG:NE	3:C:359:ALA:OXT	2.42	0.52
6:F:319:LEU:HA	6:F:322:ARG:HB3	1.90	0.52
1:A:823:GLY:HA3	9:I:1236:VAL:HG22	1.90	0.52
1:A:1154:TRP:HA	1:A:1157:ASP:HB2	1.91	0.52
2:B:82:ARG:HD3	2:B:138:ALA:HB1	1.91	0.52
5:E:122:CYS:SG	5:E:131:LYS:NZ	2.63	0.52
6:F:206:LEU:HD21	6:F:330:ILE:HG21	1.91	0.52
1:A:63:SER:O	2:B:1190:ASN:ND2	2.42	0.52
1:A:844:VAL:HG11	1:A:1355:MET:HE1	1.90	0.52
3:C:249:ARG:NH1	3:C:286:GLU:OE2	2.43	0.52
6:F:110:VAL:HG22	6:F:148:ALA:HB3	1.92	0.52
2:B:330:GLU:OE2	2:B:361:ASN:ND2	2.30	0.52
3:C:113:LEU:HD21	3:C:125:ILE:HG21	1.90	0.52
3:C:128:ARG:HB3	3:C:145:PRO:HB2	1.92	0.52
4:D:53:VAL:HG22	4:D:87:GLU:HB3	1.91	0.52
1:A:330:ASN:ND2	1:A:445:GLN:OE1	2.43	0.52
1:A:919:ASN:OD1	1:A:1340:ARG:NH2	2.42	0.52
2:B:688:TYR:HE1	7:G:76:CYS:HB2	1.75	0.52
1:A:59:CYS:O	1:A:61:THR:N	2.40	0.52
1:A:988:PRO:HD2	1:A:991:LEU:HD12	1.92	0.52
1:A:14:ASN:O	2:B:1229:ASN:N	2.41	0.51
2:B:117:ALA:HA	2:B:122:LEU:HB2	1.91	0.51
2:B:305:MET:HG2	2:B:398:LEU:HD23	1.92	0.51
2:B:1010:LEU:HB2	2:B:1015:MET:HE3	1.92	0.51
1:A:119:LYS:HD2	1:A:122:ILE:HD11	1.92	0.51
2:B:296:GLU:N	2:B:296:GLU:OE1	2.42	0.51
2:B:967:ALA:HB1	2:B:969:MET:HE3	1.92	0.51
9:I:1013:TRP:NE1	9:I:1143:GLU:OE1	2.35	0.51
1:A:252:ILE:HD13	1:A:256:ILE:HG22	1.92	0.51
1:A:512:ARG:HA	1:A:602:VAL:HG12	1.93	0.51
1:A:573:TRP:N	1:A:604:ASP:OD2	2.44	0.51
2:B:414:ARG:HE	2:B:747:GLU:CD	2.18	0.51
1:A:1220:PRO:HG2	1:A:1222:ILE:HD11	1.92	0.51
2:B:51:MET:HE1	2:B:160:PHE:CD1	2.46	0.51
2:B:582:GLU:O	2:B:582:GLU:HG2	2.09	0.51
2:B:526:THR:O	2:B:527:HIS:ND1	2.43	0.51
7:G:45:HIS:NE2	7:G:89:GLN:OE1	2.44	0.51
1:A:24:GLN:OE1	2:B:1200:ASN:ND2	2.37	0.51
1:A:1375:ASN:OD1	1:A:1385:ARG:NE	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:325:ASN:OD1	6:F:325:ASN:N	2.39	0.51
9:I:1158:PRO:HG2	9:I:1161:VAL:HG13	1.93	0.51
1:A:1275:ARG:O	1:A:1287:LEU:N	2.40	0.51
2:B:992:ILE:HG23	2:B:1007:ALA:HA	1.92	0.51
1:A:1070:ASN:ND2	1:A:1090:GLN:OE1	2.36	0.51
3:C:88:MET:HE2	3:C:88:MET:HA	1.93	0.51
1:A:70:MET:HB3	2:B:1217:ILE:HG21	1.91	0.51
1:A:909:ARG:NH1	1:A:1282:GLY:O	2.42	0.51
1:A:76:LEU:HD22	1:A:234:VAL:HG22	1.93	0.50
2:B:513:ASN:HA	2:B:811:TYR:HA	1.93	0.50
2:B:1177:SER:OG	2:B:1217:ILE:HD11	2.11	0.50
1:A:1247:ALA:O	1:A:1251:VAL:HG12	2.11	0.50
1:A:370:LYS:HE3	1:A:391:GLU:HG3	1.92	0.50
1:A:1138:SER:OG	1:A:1139:THR:N	2.37	0.50
2:B:285:ASP:HB2	7:G:3:ILE:HG21	1.92	0.50
6:F:35:TYR:HE2	6:F:40:PHE:CD1	2.28	0.50
2:B:414:ARG:HG2	2:B:415:THR:HG23	1.93	0.50
1:A:46:TYR:CZ	1:A:212:ILE:HG12	2.47	0.50
1:A:171:ARG:HA	1:A:197:VAL:HG21	1.94	0.50
1:A:1051:GLU:OE1	1:A:1051:GLU:N	2.44	0.50
2:B:206:GLU:HG2	2:B:526:THR:HA	1.93	0.50
3:C:272:MET:N	3:C:276:LYS:O	2.42	0.50
6:F:188:LEU:O	6:F:191:SER:OG	2.24	0.50
1:A:537:ASP:OD1	1:A:537:ASP:N	2.33	0.50
1:A:907:LYS:HE3	1:A:911:ILE:HD11	1.94	0.50
2:B:874:ARG:HG2	3:C:99:PHE:CE1	2.47	0.50
2:B:903:ILE:O	2:B:905:LYS:N	2.43	0.50
6:F:176:LEU:HD23	6:F:176:LEU:H	1.77	0.50
8:H:26:THR:O	8:H:29:ILE:HG12	2.11	0.50
3:C:5:PHE:CZ	3:C:45:MET:HG2	2.47	0.50
1:A:25:GLY:HA3	1:A:75:ILE:HG12	1.92	0.50
1:A:565:ILE:HG22	1:A:623:ARG:HD3	1.93	0.50
2:B:56:PRO:HA	2:B:94:VAL:HG11	1.94	0.50
2:B:236:PRO:HG3	2:B:374:PRO:HB2	1.94	0.49
2:B:263:THR:HG22	9:I:1212:ALA:HB3	1.94	0.49
2:B:304:PHE:O	2:B:307:GLU:HG3	2.12	0.49
2:B:316:LEU:HD21	2:B:321:GLN:HE22	1.77	0.49
1:A:1374:LEU:HD21	1:A:1384:LEU:HG	1.92	0.49
2:B:93:ASP:HB3	2:B:131:ALA:HB3	1.94	0.49
3:C:79:LYS:HE2	3:C:161:GLU:HB2	1.93	0.49
8:H:25:ARG:O	8:H:29:ILE:HG23	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1345:ASP:OD1	1:A:1345:ASP:N	2.45	0.49
2:B:404:VAL:O	7:G:52:LYS:NZ	2.46	0.49
2:B:1161:MET:SD	2:B:1161:MET:N	2.86	0.49
1:A:340:TYR:CE1	1:A:465:LEU:HD22	2.47	0.49
1:A:680:ILE:HD13	1:A:704:LEU:HB3	1.94	0.49
2:B:1032:SER:O	2:B:1036:ARG:HB2	2.11	0.49
1:A:1181:ASN:ND2	1:A:1184:THR:OG1	2.45	0.49
2:B:675:ILE:HD11	2:B:739:GLU:HB3	1.94	0.49
1:A:865:LEU:HD12	1:A:1349:ASN:HD21	1.78	0.49
6:F:94:LYS:O	6:F:97:SER:OG	2.22	0.49
1:A:172:GLU:OE2	1:A:172:GLU:HA	2.13	0.49
2:B:73:ARG:NH2	2:B:79:ASP:OD2	2.38	0.49
7:G:51:ASP:OD2	7:G:52:LYS:N	2.46	0.49
1:A:419:ARG:HB2	1:A:463:MET:SD	2.52	0.49
2:B:261:ASN:HA	2:B:266:SER:HA	1.95	0.49
2:B:877:PHE:HB3	2:B:1110:ARG:HD2	1.95	0.49
2:B:908:LYS:NZ	2:B:909:PRO:O	2.46	0.49
1:A:5:TYR:HB3	6:F:69:TYR:HB3	1.94	0.49
1:A:79:HIS:ND1	1:A:240:ILE:O	2.32	0.49
2:B:227:ILE:HG22	2:B:228:ILE:HG22	1.94	0.49
2:B:1206:ASP:OD2	2:B:1237:ARG:NH2	2.46	0.49
7:G:22:PHE:HE1	7:G:32:GLY:HA3	1.78	0.49
8:H:22:ASP:OD1	8:H:22:ASP:N	2.46	0.49
8:H:64:VAL:O	8:H:68:THR:OG1	2.27	0.49
1:A:550:LEU:HD23	1:A:558:MET:HE1	1.94	0.48
1:A:559:LEU:HD22	1:A:639:LEU:HD22	1.95	0.48
1:A:672:GLU:O	1:A:676:GLU:HG3	2.13	0.48
1:A:844:VAL:HG21	1:A:1355:MET:HE1	1.95	0.48
5:E:95:LEU:HD22	5:E:105:ILE:HG23	1.96	0.48
2:B:82:ARG:HB2	2:B:140:TYR:CD2	2.47	0.48
6:F:331:GLU:HA	6:F:334:LYS:HE3	1.95	0.48
1:A:1211:SER:OG	1:A:1212:VAL:N	2.46	0.48
2:B:101:HIS:N	2:B:110:ILE:O	2.39	0.48
3:C:178:LEU:O	3:C:224:PRO:HD3	2.13	0.48
3:C:332:LEU:O	3:C:336:LEU:HG	2.13	0.48
5:E:67:THR:OG1	5:E:134:GLU:OE2	2.30	0.48
1:A:934:VAL:HG13	1:A:1026:ILE:HD11	1.96	0.48
2:B:515:LEU:HD23	2:B:842:VAL:HG11	1.95	0.48
2:B:279:PHE:CE1	2:B:368:LEU:HD23	2.48	0.48
2:B:1179:ILE:HG21	2:B:1232:SER:HB2	1.94	0.48
2:B:1187:ALA:HB1	2:B:1207:ILE:HD12	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:32:LYS:HD3	8:H:49:ILE:HG22	1.96	0.48
9:I:1070:ASP:OD2	9:I:1074:ARG:NH2	2.45	0.48
7:G:6:ALA:HA	9:I:1119:VAL:HG11	1.95	0.48
9:I:1238:ILE:HD13	9:I:1246:LEU:HD21	1.95	0.48
1:A:529:GLY:HA2	1:A:532:GLN:HG3	1.96	0.48
2:B:242:ASN:HD21	9:I:1213:TYR:HE1	1.62	0.48
2:B:657:VAL:HB	2:B:659:GLU:HG3	1.95	0.48
1:A:269:ASN:O	1:A:273:ASP:HB2	2.14	0.48
1:A:1173:ASN:ND2	7:G:18:GLY:HA2	2.28	0.48
2:B:484:GLN:O	2:B:488:SER:OG	2.31	0.48
2:B:557:GLN:CD	2:B:570:GLN:HG3	2.39	0.48
4:D:27:PRO:HD2	4:D:30:LYS:HB3	1.95	0.48
1:A:8:ILE:HD12	2:B:1232:SER:HB3	1.96	0.48
1:A:299:ILE:HG22	1:A:300:MET:HE2	1.95	0.48
1:A:428:ILE:O	2:B:1158:GLN:NE2	2.38	0.48
2:B:320:PHE:O	2:B:324:GLN:HG3	2.13	0.48
2:B:1179:ILE:HB	2:B:1234:LEU:HD11	1.95	0.48
2:B:328:ASN:HA	9:I:1075:ILE:HD11	1.95	0.47
7:G:11:MET:HB3	7:G:22:PHE:HB3	1.96	0.47
9:I:1240:LEU:C	9:I:1242:VAL:H	2.22	0.47
2:B:304:PHE:HD2	2:B:402:MET:HE2	1.79	0.47
6:F:304:LEU:O	6:F:307:ILE:HG12	2.13	0.47
1:A:378:ARG:HB3	1:A:406:TYR:HB2	1.97	0.47
2:B:180:LYS:NZ	8:H:80:TYR:OXT	2.37	0.47
1:A:235:ARG:HA	1:A:238:LEU:HD12	1.97	0.47
1:A:741:SER:HB3	1:A:743:PRO:HD2	1.97	0.47
2:B:47:PHE:CE1	2:B:51:MET:HE3	2.50	0.47
2:B:65:VAL:HG13	9:I:1206:SER:HB3	1.96	0.47
2:B:91:PHE:HA	2:B:132:ALA:HA	1.95	0.47
3:C:272:MET:HB2	3:C:276:LYS:HB2	1.95	0.47
1:A:83:LEU:HD23	1:A:197:VAL:HG12	1.95	0.47
1:A:103:GLY:HA3	1:A:176:ARG:HB3	1.96	0.47
1:A:664:GLN:O	1:A:668:GLU:HG2	2.14	0.47
1:A:1390:SER:O	1:A:1394:VAL:HG22	2.14	0.47
2:B:102:ARG:HG3	2:B:109:LYS:HA	1.96	0.47
2:B:404:VAL:C	2:B:405:PHE:HD2	2.23	0.47
2:B:1127:PRO:HB2	2:B:1136:LEU:HD23	1.95	0.47
1:A:349:GLN:NE2	1:A:408:ASP:OD1	2.38	0.47
1:A:1002:ILE:HG23	1:A:1006:LEU:HD12	1.96	0.47
2:B:20:GLU:HG2	2:B:716:PRO:HG2	1.96	0.47
2:B:85:VAL:HA	2:B:138:ALA:HA	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:421:SER:O	2:B:425:LEU:HB2	2.14	0.47
2:B:455:GLU:H	2:B:455:GLU:CD	2.23	0.47
3:C:257:TYR:CE1	3:C:336:LEU:HB2	2.44	0.47
4:D:151:LEU:HD21	4:D:161:LEU:HD11	1.95	0.47
6:F:292:MET:HA	6:F:295:THR:HG22	1.96	0.47
9:I:1061:MET:HE2	9:I:1131:VAL:HA	1.96	0.47
2:B:118:ARG:NH2	2:B:184:GLU:OE2	2.47	0.47
1:A:1244:GLU:OE2	7:G:15:TYR:OH	2.26	0.47
2:B:796:ARG:HG3	2:B:1038:THR:HG22	1.96	0.47
2:B:709:ILE:HD11	2:B:762:LYS:HE3	1.95	0.47
3:C:288:HIS:CE1	3:C:312:CYS:HB2	2.51	0.47
9:I:1045:TYR:CE1	9:I:1181:LYS:HE3	2.50	0.47
1:A:860:LEU:O	1:A:1351:ARG:NH1	2.48	0.46
2:B:79:ASP:CG	2:B:82:ARG:HH12	2.23	0.46
2:B:796:ARG:NH2	2:B:1001:GLY:O	2.47	0.46
6:F:92:ILE:HG23	6:F:101:LEU:O	2.16	0.46
1:A:422:SER:OG	2:B:1151:GLU:OE2	2.23	0.46
1:A:1171:ILE:HG22	1:A:1172:ALA:O	2.15	0.46
2:B:305:MET:O	2:B:309:LEU:HG	2.15	0.46
5:E:124:LYS:HD2	5:E:124:LYS:HA	1.62	0.46
1:A:1322:THR:HG23	1:A:1326:TYR:HD2	1.80	0.46
2:B:234:SER:OG	2:B:374:PRO:HD2	2.15	0.46
2:B:850:ILE:HG21	2:B:1022:LEU:HD11	1.97	0.46
1:A:320:TRP:CE2	2:B:1135:PRO:HG3	2.50	0.46
2:B:825:PHE:CE2	8:H:1:MET:HE2	2.49	0.46
7:G:33:ASP:O	7:G:35:GLN:N	2.49	0.46
1:A:145:VAL:HG23	1:A:155:TRP:HB2	1.97	0.46
1:A:330:ASN:HB2	1:A:445:GLN:HB3	1.97	0.46
2:B:39:LEU:HD11	2:B:781:LEU:HD22	1.97	0.46
2:B:956:MET:HG2	2:B:957:TYR:H	1.81	0.46
8:H:32:LYS:HE2	8:H:32:LYS:HB3	1.73	0.46
1:A:261:GLN:OE1	1:A:261:GLN:HA	2.15	0.46
1:A:1177:ARG:HD2	1:A:1224:ARG:NH1	2.31	0.46
2:B:591:LEU:HD22	2:B:598:GLN:HG2	1.98	0.46
2:B:1187:ALA:CB	2:B:1207:ILE:HD12	2.45	0.46
1:A:331:SER:O	1:A:638:GLN:NE2	2.47	0.46
1:A:1432:ASP:O	1:A:1436:ILE:HG12	2.16	0.46
2:B:796:ARG:HA	2:B:799:TYR:HD2	1.81	0.46
2:B:1088:MET:HG3	2:B:1101:ILE:HB	1.97	0.46
2:B:604:ASN:O	2:B:608:VAL:HG23	2.16	0.46
3:C:17:PHE:O	3:C:23:LYS:HE3	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:881:GLU:O	1:A:885:LYS:HB3	2.15	0.46
1:A:974:VAL:HG12	1:A:1027:ARG:HE	1.81	0.45
2:B:296:GLU:HB2	2:B:609:ARG:HH22	1.81	0.45
4:D:203:SER:OG	4:D:204:LYS:N	2.49	0.45
7:G:21:ILE:HD12	7:G:21:ILE:O	2.16	0.45
9:I:1160:TRP:H	9:I:1160:TRP:CD1	2.34	0.45
1:A:1306:ASP:OD1	1:A:1308:ASN:N	2.47	0.45
2:B:343:PHE:HA	9:I:1196:GLU:HG3	1.97	0.45
2:B:358:GLN:HG2	9:I:1182:LEU:HA	1.98	0.45
2:B:486:ILE:O	2:B:506:THR:OG1	2.28	0.45
3:C:9:GLU:OE1	3:C:11:LYS:HG2	2.17	0.45
4:D:92:VAL:HG11	4:D:96:VAL:HG11	1.97	0.45
6:F:81:LEU:HB2	6:F:139:VAL:HG21	1.97	0.45
9:I:1049:ARG:HB3	9:I:1049:ARG:NH1	2.31	0.45
1:A:244:LEU:HD23	1:A:244:LEU:HA	1.70	0.45
3:C:3:LYS:HB3	3:C:3:LYS:HE3	1.63	0.45
3:C:30:PHE:HA	3:C:128:ARG:HH12	1.81	0.45
1:A:723:ILE:HD13	1:A:731:PHE:HB2	1.97	0.45
1:A:941:ILE:HG21	1:A:1022:ILE:HD11	1.99	0.45
2:B:1173:ASP:OD1	2:B:1173:ASP:N	2.49	0.45
6:F:298:LYS:HA	6:F:298:LYS:HD3	1.73	0.45
7:G:71:LYS:HE3	7:G:71:LYS:HB2	1.88	0.45
2:B:527:HIS:O	2:B:527:HIS:CG	2.69	0.45
1:A:72:HIS:N	1:A:205:PRO:HB3	2.32	0.45
1:A:521:VAL:HB	1:A:549:LEU:HB3	1.97	0.45
4:D:101:ASN:OD1	4:D:101:ASN:N	2.48	0.45
1:A:86:LEU:HD23	1:A:272:LEU:HD21	1.97	0.45
1:A:92:ARG:HB2	1:A:154:PHE:CE1	2.52	0.45
1:A:860:LEU:HD22	1:A:931:PRO:HB3	1.99	0.45
1:A:1181:ASN:OD1	1:A:1181:ASN:N	2.46	0.45
2:B:140:TYR:HD1	2:B:144:ARG:HE	1.64	0.45
2:B:216:HIS:HB3	9:I:1219:PHE:CZ	2.52	0.45
2:B:458:THR:HG22	2:B:459:GLN:H	1.82	0.45
2:B:1036:ARG:HB3	2:B:1038:THR:HG23	1.99	0.45
1:A:368:ASN:ND2	1:A:374:PRO:O	2.50	0.45
1:A:829:ALA:HA	1:A:1369:LEU:HD13	1.99	0.45
1:A:1135:THR:HB	1:A:1173:ASN:HA	1.98	0.45
2:B:884:GLU:HA	2:B:983:ARG:HA	1.99	0.45
1:A:26:VAL:HG22	1:A:73:PRO:O	2.17	0.45
2:B:58:ILE:HA	2:B:62:MET:HG3	1.98	0.45
2:B:301:VAL:HA	2:B:402:MET:HE1	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:887:VAL:O	2:B:979:PHE:HB2	2.17	0.45
1:A:115:LEU:HG	1:A:119:LYS:HB3	1.99	0.45
1:A:234:VAL:O	1:A:238:LEU:HG	2.17	0.45
1:A:717:LYS:HB3	1:A:718:PRO:HD3	1.99	0.45
9:I:1087:SER:OG	9:I:1112:GLU:OE2	2.26	0.45
1:A:472:MET:HE2	5:E:82:VAL:HA	1.98	0.44
1:A:937:ILE:HG23	1:A:1025:LEU:HD23	1.99	0.44
2:B:205:LEU:HD23	2:B:205:LEU:HA	1.80	0.44
6:F:100:ILE:HG13	6:F:121:ASN:OD1	2.17	0.44
9:I:1160:TRP:CE3	9:I:1161:VAL:HG12	2.52	0.44
9:I:1233:ILE:HG23	9:I:1236:VAL:HB	1.99	0.44
1:A:127:SER:OG	1:A:129:THR:OG1	2.33	0.44
1:A:344:PHE:HE1	2:B:1119:ARG:HE	1.65	0.44
1:A:1355:MET:HE2	1:A:1355:MET:HB2	1.83	0.44
2:B:380:ALA:HB1	2:B:383:ARG:NH1	2.31	0.44
2:B:670:THR:HG23	2:B:742:THR:HG23	2.00	0.44
6:F:13:ILE:HD11	6:F:70:MET:HE3	1.99	0.44
7:G:23:ARG:NH2	7:G:29:SER:OG	2.50	0.44
1:A:417:PHE:CD2	1:A:465:LEU:HD12	2.52	0.44
1:A:1053:LEU:HD11	1:A:1081:PHE:HE2	1.83	0.44
1:A:1122:PHE:CZ	1:A:1199:LEU:HD11	2.52	0.44
2:B:262:SER:OG	2:B:263:THR:N	2.50	0.44
2:B:404:VAL:HG12	2:B:405:PHE:CD2	2.51	0.44
2:B:1233:VAL:O	2:B:1234:LEU:HB2	2.16	0.44
4:D:2:ALA:O	4:D:6:LEU:HB2	2.17	0.44
1:A:117:ARG:H	1:A:117:ARG:HG2	1.35	0.44
1:A:778:PHE:CE2	7:G:84:ILE:HG23	2.52	0.44
2:B:23:GLU:HG3	2:B:1065:PRO:HD3	1.99	0.44
2:B:27:LEU:HD23	2:B:27:LEU:HA	1.87	0.44
2:B:680:ILE:HD12	2:B:680:ILE:HA	1.81	0.44
6:F:188:LEU:HB3	6:F:304:LEU:HD11	2.00	0.44
2:B:1082:PHE:HB3	3:C:200:MET:SD	2.58	0.44
2:B:1095:GLU:HG2	3:C:52:ARG:CZ	2.48	0.44
1:A:1274:MET:HE3	1:A:1288:ASP:OD1	2.18	0.44
2:B:209:ARG:NE	2:B:212:THR:OG1	2.47	0.44
2:B:329:ARG:NH2	9:I:1068:ALA:O	2.51	0.44
2:B:427:LYS:HD2	2:B:503:ARG:HB2	2.00	0.44
1:A:123:GLU:O	1:A:126:SER:OG	2.33	0.44
2:B:322:PRO:HD2	2:B:335:PHE:HE2	1.82	0.44
2:B:933:ILE:O	2:B:934:ILE:HG13	2.18	0.44
3:C:61:VAL:HA	3:C:65:GLU:HB2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:27:LEU:HD23	6:F:51:VAL:HG11	1.99	0.44
1:A:525:LEU:HB2	3:C:299:TYR:CE2	2.53	0.44
2:B:419:HIS:HB3	2:B:423:VAL:HB	2.00	0.44
2:B:449:LEU:HG	2:B:454:PHE:CE1	2.53	0.44
2:B:913:TYR:O	2:B:916:LEU:HD12	2.18	0.44
6:F:46:LEU:N	6:F:77:VAL:O	2.50	0.44
1:A:666:VAL:HG23	1:A:718:PRO:HB2	1.99	0.44
2:B:438:ILE:HG21	9:I:1206:SER:HA	2.00	0.44
2:B:957:TYR:HE1	2:B:984:LEU:HD22	1.83	0.44
3:C:12:PRO:HB3	3:C:41:VAL:HG12	2.00	0.44
4:D:92:VAL:HG12	4:D:93:ASP:H	1.83	0.44
4:D:104:ASP:OD2	4:D:104:ASP:N	2.51	0.44
6:F:91:LYS:HE2	6:F:105:LEU:HB2	2.00	0.44
8:H:9:THR:HB	8:H:65:CYS:HB2	2.00	0.44
1:A:649:PHE:HB3	2:B:855:ILE:HD12	2.00	0.43
2:B:185:ASP:HB3	2:B:188:GLU:HG2	2.00	0.43
2:B:347:PRO:HA	2:B:350:TYR:CE1	2.53	0.43
2:B:1237:ARG:NH1	6:F:10:THR:OG1	2.45	0.43
9:I:1024:ALA:HB1	9:I:1029:ILE:O	2.18	0.43
2:B:109:LYS:HB2	2:B:109:LYS:HE2	1.68	0.43
2:B:369:ASP:O	2:B:386:LYS:NZ	2.51	0.43
2:B:371:ILE:HD12	2:B:371:ILE:HA	1.83	0.43
2:B:558:SER:OG	2:B:559:ALA:N	2.51	0.43
2:B:1067:ASN:HB3	2:B:1070:LEU:HB2	1.99	0.43
3:C:71:LEU:HG	3:C:102:ILE:HG21	2.00	0.43
5:E:104:ASP:O	5:E:108:GLN:HG2	2.18	0.43
1:A:1015:THR:OG1	1:A:1016:CYS:N	2.50	0.43
2:B:249:ARG:NH1	2:B:259:GLU:OE1	2.47	0.43
3:C:244:ARG:HD3	3:C:244:ARG:HA	1.77	0.43
3:C:301:MET:HE1	3:C:335:LEU:O	2.18	0.43
3:C:315:HIS:CD2	3:C:316:LYS:HG3	2.53	0.43
5:E:75:GLU:CD	5:E:121:ARG:HH21	2.24	0.43
5:E:124:LYS:HB2	5:E:132:ILE:HB	2.01	0.43
1:A:1386:MET:HG2	1:A:1394:VAL:CG2	2.47	0.43
3:C:188:ASP:OD1	3:C:188:ASP:N	2.39	0.43
3:C:255:LYS:O	3:C:258:GLU:HG3	2.18	0.43
1:A:65:GLN:O	1:A:67:LYS:N	2.51	0.43
2:B:816:PRO:CB	3:C:86:LEU:HB3	2.48	0.43
2:B:1008:LEU:HD12	2:B:1008:LEU:HA	1.86	0.43
3:C:81:GLU:HB2	3:C:84:THR:HG23	2.00	0.43
5:E:95:LEU:HD21	5:E:108:GLN:HB2	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:152:PHE:CD1	1:A:264:GLN:HG2	2.53	0.43
1:A:1154:TRP:HH2	1:A:1224:ARG:HG3	1.82	0.43
2:B:886:LYS:HD2	2:B:979:PHE:HE1	1.84	0.43
4:D:4:GLN:O	4:D:8:THR:HG22	2.19	0.43
6:F:198:LYS:HD3	6:F:199:GLN:H	1.83	0.43
1:A:315:LEU:HD11	1:A:1387:ALA:HB1	2.00	0.43
1:A:1265:ILE:HG23	1:A:1295:THR:HB	2.00	0.43
2:B:279:PHE:HB2	2:B:387:LEU:HD11	2.01	0.43
3:C:70:MET:HG2	3:C:176:PHE:CE1	2.53	0.43
3:C:246:ILE:HG21	3:C:347:PHE:CZ	2.53	0.43
3:C:319:MET:HB3	3:C:319:MET:HE3	1.79	0.43
1:A:112:TYR:HE1	1:A:123:GLU:HG2	1.84	0.43
2:B:364:GLN:O	2:B:367:ILE:HG13	2.19	0.43
6:F:132:VAL:HG22	6:F:154:ILE:HD13	2.01	0.43
1:A:26:VAL:HG11	1:A:61:THR:HG21	2.01	0.43
1:A:499:GLN:NE2	1:A:617:TYR:OH	2.51	0.43
1:A:1151:ASP:C	1:A:1155:MET:HG3	2.44	0.43
5:E:120:MET:O	5:E:120:MET:HG3	2.18	0.43
6:F:6:ILE:HA	6:F:75:SER:HA	2.00	0.43
6:F:28:LEU:HD23	6:F:28:LEU:HA	1.76	0.43
6:F:82:ASN:OD1	6:F:82:ASN:N	2.51	0.43
1:A:419:ARG:NH1	9:I:1245:ASN:HB3	2.34	0.43
1:A:815:LYS:HE3	1:A:815:LYS:HB3	1.74	0.43
2:B:40:ILE:HG13	2:B:189:PRO:HG3	2.00	0.43
2:B:815:TRP:CG	2:B:816:PRO:HD3	2.54	0.43
9:I:1037:ILE:HB	9:I:1142:ILE:HD11	2.01	0.43
1:A:344:PHE:HZ	2:B:1119:ARG:HG3	1.83	0.42
1:A:1021:ALA:HA	1:A:1024:ASP:OD2	2.19	0.42
2:B:363:ARG:HG3	2:B:364:GLN:N	2.34	0.42
2:B:559:ALA:HA	2:B:802:ASN:HD21	1.83	0.42
2:B:796:ARG:HA	2:B:799:TYR:CD2	2.53	0.42
2:B:1238:VAL:H	6:F:71:HIS:CD2	2.37	0.42
5:E:114:LYS:HE2	5:E:114:LYS:HB2	1.79	0.42
9:I:1237:ASP:C	9:I:1238:ILE:HG13	2.43	0.42
9:I:1243:LEU:HA	9:I:1246:LEU:HD23	2.01	0.42
1:A:425:ARG:NH2	1:A:1039:GLU:OE1	2.52	0.42
1:A:997:LEU:HD13	4:D:192:MET:HB2	2.00	0.42
2:B:72:GLN:HE21	2:B:454:PHE:HE2	1.67	0.42
2:B:205:LEU:HD21	2:B:527:HIS:HB3	2.01	0.42
2:B:646:HIS:CG	2:B:647:PRO:HD2	2.54	0.42
2:B:807:THR:CG2	2:B:1109:GLN:HB3	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:883:ARG:HB2	2:B:986:TYR:HE1	1.85	0.42
2:B:911:ALA:HB1	2:B:932:ILE:HD11	2.00	0.42
4:D:14:ILE:HD12	4:D:45:ALA:HB2	2.01	0.42
1:A:502:ASP:OD2	2:B:861:GLN:HG2	2.19	0.42
1:A:1076:ARG:HB3	1:A:1077:PRO:HD3	2.00	0.42
1:A:1283:LYS:HE2	1:A:1285:VAL:HG12	2.01	0.42
1:A:1431:MET:HE3	1:A:1431:MET:HB3	1.86	0.42
2:B:694:ARG:HE	2:B:701:TRP:CD1	2.37	0.42
3:C:46:ASP:N	3:C:46:ASP:OD1	2.52	0.42
3:C:74:LYS:HB2	3:C:162:ASP:HB3	2.01	0.42
5:E:96:LYS:HA	5:E:96:LYS:HD3	1.82	0.42
6:F:86:LEU:HB3	6:F:306:PHE:HB2	2.01	0.42
9:I:1043:ARG:C	9:I:1185:LYS:HB3	2.45	0.42
9:I:1122:TYR:HA	9:I:1140:TYR:OH	2.18	0.42
1:A:51:GLY:C	1:A:206:ILE:HD11	2.44	0.42
1:A:244:LEU:HD11	1:A:256:ILE:HD12	2.01	0.42
1:A:362:LEU:HA	1:A:365:TYR:HD2	1.83	0.42
1:A:377:SER:O	1:A:378:ARG:HB2	2.19	0.42
2:B:995:LYS:HD2	2:B:1003:LYS:HD2	2.02	0.42
2:B:1087:LYS:HB3	2:B:1087:LYS:HE2	1.85	0.42
9:I:1223:ILE:H	9:I:1223:ILE:HG13	1.61	0.42
1:A:92:ARG:HB2	1:A:154:PHE:HE1	1.84	0.42
1:A:739:LYS:HA	1:A:739:LYS:HD3	1.88	0.42
1:A:858:ASP:CG	1:A:1351:ARG:HH22	2.27	0.42
2:B:102:ARG:HG2	2:B:109:LYS:HD3	2.01	0.42
2:B:427:LYS:O	2:B:430:LYS:HG2	2.20	0.42
2:B:435:THR:OG1	2:B:436:SER:N	2.52	0.42
2:B:733:VAL:HG11	2:B:740:PHE:CE2	2.54	0.42
6:F:5:LYS:HD3	6:F:5:LYS:HA	1.81	0.42
6:F:128:GLN:NE2	6:F:326:ILE:HD11	2.35	0.42
9:I:1019:LYS:O	9:I:1023:THR:OG1	2.38	0.42
1:A:204:PRO:HB3	1:A:208:ILE:HD11	2.02	0.42
1:A:1410:ILE:HG12	2:B:1156:THR:HG21	2.02	0.42
2:B:640:ARG:NH2	2:B:736:GLY:O	2.44	0.42
2:B:1198:CYS:SG	2:B:1199:MET:N	2.92	0.42
6:F:90:VAL:C	6:F:91:LYS:HD2	2.44	0.42
6:F:95:ASN:C	6:F:97:SER:H	2.27	0.42
8:H:23:LYS:O	8:H:27:GLU:HG2	2.19	0.42
9:I:1155:ILE:HD12	9:I:1155:ILE:HA	1.87	0.42
2:B:773:ASP:OD1	2:B:774:VAL:N	2.52	0.42
5:E:76:ALA:HB1	5:E:146:LEU:HD11	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:1201:SER:OG	9:I:1202:GLY:N	2.53	0.42
1:A:50:MET:SD	1:A:74:GLY:HA3	2.60	0.42
1:A:185:LEU:HD12	1:A:185:LEU:HA	1.78	0.42
1:A:748:ILE:HA	1:A:792:TYR:HB2	2.02	0.42
5:E:71:LEU:HG	5:E:141:MET:HE3	2.01	0.42
6:F:310:LEU:HD23	6:F:310:LEU:HA	1.91	0.42
9:I:1192:MET:SD	9:I:1193:ILE:HG13	2.59	0.42
1:A:112:TYR:CE1	1:A:123:GLU:HG2	2.55	0.42
1:A:463:MET:HE3	1:A:463:MET:HB3	1.82	0.42
1:A:971:LEU:HD23	1:A:999:ARG:HG3	2.01	0.42
1:A:1176:ILE:HD11	1:A:1178:LEU:HD21	2.02	0.42
2:B:598:GLN:HA	2:B:623:GLY:HA2	2.01	0.42
3:C:301:MET:HE3	3:C:301:MET:HB3	1.78	0.42
1:A:70:MET:HE1	2:B:1175:CYS:HB2	2.02	0.42
1:A:336:ASP:OD1	1:A:432:ARG:NH2	2.49	0.42
1:A:1100:ASN:HB3	1:A:1103:VAL:HG22	2.02	0.42
2:B:33:ALA:O	2:B:37:THR:HG23	2.20	0.42
2:B:539:ALA:HB1	9:I:1231:PHE:HD2	1.85	0.42
9:I:1089:PHE:N	9:I:1089:PHE:CD1	2.87	0.42
9:I:1149:PHE:CD1	9:I:1169:ALA:HB1	2.54	0.42
1:A:370:LYS:HG2	1:A:377:SER:HB3	2.02	0.41
2:B:326:GLU:HG2	2:B:331:LYS:HB2	2.01	0.41
2:B:911:ALA:HA	2:B:930:GLY:O	2.20	0.41
3:C:5:PHE:HB3	3:C:353:ASN:HB3	2.03	0.41
6:F:201:CYS:O	6:F:204:GLU:HG2	2.19	0.41
6:F:319:LEU:HB3	6:F:323:HIS:CE1	2.54	0.41
1:A:226:ILE:HD12	1:A:226:ILE:HA	1.92	0.41
1:A:618:HIS:O	1:A:622:ARG:HG2	2.20	0.41
1:A:716:LEU:HD13	1:A:716:LEU:HA	1.88	0.41
6:F:1:MET:HE1	6:F:3:ASP:HB2	2.02	0.41
1:A:764:PRO:HA	1:A:771:THR:HA	2.02	0.41
1:A:1343:MET:HG3	1:A:1348:PRO:HD2	2.02	0.41
1:A:1433:GLU:OE2	6:F:54:ARG:NH2	2.53	0.41
2:B:708:PHE:O	2:B:763:HIS:HA	2.20	0.41
2:B:1180:CYS:C	2:B:1182:ASN:H	2.29	0.41
9:I:1082:CYS:HB3	9:I:1089:PHE:HE2	1.85	0.41
2:B:267:LYS:HE3	2:B:267:LYS:HB3	1.91	0.41
2:B:539:ALA:HB1	9:I:1231:PHE:CD2	2.56	0.41
2:B:1056:VAL:HG12	8:H:49:ILE:O	2.21	0.41
2:B:67:ILE:HD11	9:I:1198:PHE:HD1	1.86	0.41
2:B:179:LYS:O	2:B:182:ILE:HG22	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:790:ASN:OD1	2:B:790:ASN:N	2.53	0.41
3:C:111:PHE:CD2	3:C:132:GLN:HB2	2.55	0.41
6:F:97:SER:O	6:F:99:ILE:N	2.53	0.41
7:G:93:ILE:HG23	7:G:104:ARG:HB2	2.01	0.41
1:A:181:THR:O	1:A:185:LEU:HB2	2.21	0.41
1:A:302:ARG:O	1:A:309:ARG:N	2.45	0.41
1:A:733:MET:SD	2:B:1031:HIS:HA	2.61	0.41
2:B:646:HIS:CD2	2:B:647:PRO:HD2	2.55	0.41
2:B:872:ILE:HG12	2:B:990:LEU:HB3	2.03	0.41
6:F:86:LEU:HD13	6:F:86:LEU:HA	1.90	0.41
7:G:28:GLU:HB2	9:I:1081:ASN:HD21	1.85	0.41
8:H:29:ILE:HG22	8:H:49:ILE:CD1	2.51	0.41
9:I:1172:GLU:O	9:I:1175:THR:HG22	2.21	0.41
1:A:715:ILE:O	1:A:718:PRO:HD2	2.19	0.41
1:A:1094:MET:HE2	1:A:1298:THR:HA	2.03	0.41
1:A:1386:MET:HE3	1:A:1386:MET:HB3	1.81	0.41
2:B:441:ILE:HD13	2:B:469:ALA:HB3	2.02	0.41
2:B:464:GLU:HA	2:B:467:SER:OG	2.21	0.41
2:B:1115:VAL:O	2:B:1119:ARG:HB3	2.20	0.41
6:F:29:LYS:HB3	6:F:29:LYS:HE3	1.84	0.41
8:H:56:THR:HB	8:H:67:ARG:HH22	1.85	0.41
9:I:1100:VAL:HG23	9:I:1103:LEU:HD12	2.01	0.41
1:A:111:ARG:O	1:A:114:HIS:NE2	2.54	0.41
1:A:862:ALA:HB2	1:A:1351:ARG:HD2	2.02	0.41
2:B:268:LEU:HD12	2:B:268:LEU:HA	1.75	0.41
2:B:433:PHE:HA	2:B:478:LEU:HD11	2.01	0.41
2:B:450:LYS:HA	2:B:450:LYS:HD3	1.88	0.41
2:B:643:LYS:HB3	2:B:643:LYS:HE3	1.83	0.41
2:B:867:VAL:HG12	2:B:1026:LEU:HD22	2.02	0.41
3:C:110:VAL:HB	3:C:134:ALA:HB2	2.03	0.41
4:D:46:GLU:OE2	4:D:50:HIS:HA	2.20	0.41
7:G:13:ARG:HD3	7:G:15:TYR:OH	2.21	0.41
9:I:1122:TYR:HA	9:I:1140:TYR:HH	1.84	0.41
1:A:645:ARG:HH22	2:B:857:GLY:HA2	1.85	0.41
1:A:923:LEU:HD21	1:A:1274:MET:O	2.19	0.41
1:A:1339:ILE:O	1:A:1343:MET:HG2	2.21	0.41
2:B:26:MET:HB3	2:B:774:VAL:HG13	2.03	0.41
2:B:470:LEU:HD23	2:B:470:LEU:HA	1.80	0.41
2:B:511:ARG:HB3	2:B:811:TYR:HD2	1.86	0.41
3:C:30:PHE:HE2	8:H:20:ILE:HG13	1.86	0.41
5:E:107:LYS:HB2	5:E:107:LYS:HE3	1.89	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:16:VAL:HA	7:G:17:ASP:HA	1.67	0.41
7:G:55:ILE:HD12	7:G:55:ILE:H	1.85	0.41
1:A:320:TRP:HB3	2:B:1124:SER:HA	2.03	0.41
1:A:379:VAL:O	1:A:387:VAL:HA	2.20	0.41
1:A:528:MET:SD	3:C:307:PHE:HA	2.61	0.41
1:A:582:MET:HB2	1:A:725:PRO:HG2	2.03	0.41
1:A:591:THR:HA	1:A:601:GLY:HA3	2.02	0.41
1:A:781:GLU:CD	2:B:767:ARG:HH22	2.29	0.41
1:A:874:MET:SD	1:A:1284:LEU:HD23	2.61	0.41
1:A:1099:LYS:HE3	1:A:1307:ASP:O	2.21	0.41
2:B:195:ALA:HB3	2:B:200:TRP:CD1	2.56	0.41
2:B:832:PRO:HG2	2:B:839:HIS:CE1	2.56	0.41
5:E:95:LEU:CD1	5:E:109:GLU:HG3	2.51	0.41
8:H:75:ASP:CG	8:H:77:ARG:HH21	2.28	0.41
9:I:1102:HIS:CD2	9:I:1102:HIS:C	2.97	0.41
1:A:339:GLY:N	1:A:445:GLN:O	2.38	0.40
2:B:58:ILE:HD11	2:B:240:PHE:HB3	2.03	0.40
2:B:912:ASN:OD1	2:B:914:GLU:N	2.43	0.40
3:C:301:MET:CE	3:C:339:SER:HB3	2.51	0.40
9:I:1065:ARG:O	9:I:1069:VAL:HG23	2.21	0.40
1:A:236:LYS:HA	1:A:236:LYS:HD3	1.87	0.40
1:A:470:SER:OG	2:B:1166:GLU:OE2	2.34	0.40
1:A:1142:ASN:ND2	1:A:1144:MET:HB2	2.35	0.40
2:B:996:MET:HB2	2:B:996:MET:HE2	1.62	0.40
2:B:1181:ARG:HB2	2:B:1234:LEU:HD22	2.03	0.40
6:F:206:LEU:HD22	6:F:327:TRP:HZ3	1.86	0.40
6:F:206:LEU:HD22	6:F:327:TRP:CZ3	2.56	0.40
8:H:27:GLU:O	8:H:31:THR:HG23	2.21	0.40
2:B:78:ILE:HG22	2:B:82:ARG:NH2	2.36	0.40
7:G:95:VAL:HG12	7:G:96:CYS:H	1.87	0.40
1:A:1109:TYR:O	1:A:1112:GLU:HG2	2.22	0.40
2:B:257:THR:OG1	2:B:269:ARG:HB3	2.21	0.40
2:B:927:VAL:HG13	2:B:931:ASP:HB2	2.03	0.40
3:C:96:ARG:O	8:H:5:VAL:HG21	2.21	0.40
3:C:315:HIS:C	3:C:317:GLN:H	2.29	0.40
1:A:12:GLN:HB2	2:B:1231:THR:HG23	2.03	0.40
1:A:166:TYR:OH	1:A:252:ILE:HD11	2.22	0.40
1:A:677:SER:HB2	1:A:709:LEU:HD21	2.03	0.40
2:B:232:PHE:HB3	2:B:246:ILE:HG12	2.04	0.40
2:B:449:LEU:HG	2:B:454:PHE:CZ	2.57	0.40
2:B:476:SER:C	2:B:478:LEU:H	2.28	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:181:LEU:HB3	6:F:297:LEU:HD13	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	1390/1450 (96%)	1326 (95%)	60 (4%)	4 (0%)	37	70
2	B	1192/1242 (96%)	1107 (93%)	81 (7%)	4 (0%)	37	70
3	C	356/359 (99%)	341 (96%)	15 (4%)	0	100	100
4	D	203/205 (99%)	197 (97%)	6 (3%)	0	100	100
5	E	105/147 (71%)	91 (87%)	13 (12%)	1 (1%)	13	46
6	F	231/339 (68%)	211 (91%)	17 (7%)	3 (1%)	10	39
7	G	103/105 (98%)	94 (91%)	8 (8%)	1 (1%)	13	46
8	H	65/80 (81%)	64 (98%)	1 (2%)	0	100	100
9	I	237/1249 (19%)	222 (94%)	15 (6%)	0	100	100
All	All	3882/5176 (75%)	3653 (94%)	216 (6%)	13 (0%)	38	70

All (13) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	1139	THR
1	A	1142	ASN
2	B	1202	ASP
7	G	34	SER
6	F	70	MET
2	B	421	SER
1	A	1143	VAL

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Mol	Chain	Res	Type
6	F	100	ILE
1	A	582	MET
2	B	103	ASN
2	B	1234	LEU
5	E	42	SER
6	F	45	ILE

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	1242/1279 (97%)	1192 (96%)	50 (4%)	27	61
2	B	1042/1081 (96%)	1001 (96%)	41 (4%)	27	61
3	C	327/328 (100%)	319 (98%)	8 (2%)	44	74
4	D	185/185 (100%)	172 (93%)	13 (7%)	12	41
5	E	97/136 (71%)	93 (96%)	4 (4%)	26	60
6	F	218/312 (70%)	208 (95%)	10 (5%)	23	56
7	G	96/96 (100%)	90 (94%)	6 (6%)	15	45
8	H	61/70 (87%)	61 (100%)	0	100	100
9	I	215/1130 (19%)	202 (94%)	13 (6%)	16	47
All	All	3483/4617 (75%)	3338 (96%)	145 (4%)	27	59

All (145) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	70	MET
1	A	97	VAL
1	A	117	ARG
1	A	129	THR
1	A	140	VAL
1	A	169	ILE
1	A	185	LEU
1	A	197	VAL

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Mol	Chain	Res	Type
1	A	244	LEU
1	A	245	GLN
1	A	252	ILE
1	A	255	ASN
1	A	262	THR
1	A	359	ILE
1	A	387	VAL
1	A	409	VAL
1	A	463	MET
1	A	537	ASP
1	A	644	VAL
1	A	675	LEU
1	A	685	LEU
1	A	689	ILE
1	A	711	PHE
1	A	716	LEU
1	A	723	ILE
1	A	741	SER
1	A	812	LEU
1	A	941	ILE
1	A	943	LEU
1	A	1009	VAL
1	A	1015	THR
1	A	1051	GLU
1	A	1057	MET
1	A	1096	LEU
1	A	1152	VAL
1	A	1153	GLU
1	A	1159	LEU
1	A	1176	ILE
1	A	1183	THR
1	A	1212	VAL
1	A	1217	SER
1	A	1219	ILE
1	A	1240	MET
1	A	1242	THR
1	A	1248	VAL
1	A	1251	VAL
1	A	1308	ASN
1	A	1309	ILE
1	A	1392	VAL
1	A	1424	THR

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Mol	Chain	Res	Type
2	B	39	LEU
2	B	74	ASP
2	B	85	VAL
2	B	87	ILE
2	B	91	PHE
2	B	108	ASN
2	B	110	ILE
2	B	119	LEU
2	B	246	ILE
2	B	299	SER
2	B	319	ILE
2	B	332	ILE
2	B	340	VAL
2	B	362	GLU
2	B	363	ARG
2	B	371	ILE
2	B	401	ILE
2	B	408	THR
2	B	448	LEU
2	B	467	SER
2	B	470	LEU
2	B	476	SER
2	B	578	CYS
2	B	656	MET
2	B	704	HIS
2	B	728	THR
2	B	731	ASP
2	B	742	THR
2	B	842	VAL
2	B	900	ASP
2	B	908	LYS
2	B	978	ILE
2	B	996	MET
2	B	1061	THR
2	B	1066	ILE
2	B	1142	HIS
2	B	1161	MET
2	B	1195	ILE
2	B	1203	VAL
2	B	1228	VAL
2	B	1231	THR
3	C	7	ASN

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Mol	Chain	Res	Type
3	C	133	VAL
3	C	180	VAL
3	C	237	THR
3	C	246	ILE
3	C	287	THR
3	C	313	VAL
3	C	357	LEU
4	D	20	VAL
4	D	26	VAL
4	D	70	ASP
4	D	92	VAL
4	D	101	ASN
4	D	113	ASN
4	D	115	THR
4	D	117	VAL
4	D	120	ILE
4	D	125	LEU
4	D	168	ASP
4	D	182	VAL
4	D	186	ARG
5	E	56	THR
5	E	107	LYS
5	E	124	LYS
5	E	125	VAL
6	F	18	ASN
6	F	23	VAL
6	F	62	THR
6	F	86	LEU
6	F	130	VAL
6	F	174	GLN
6	F	182	VAL
6	F	304	LEU
6	F	313	THR
6	F	325	ASN
7	G	1	MET
7	G	3	ILE
7	G	41	SER
7	G	43	VAL
7	G	48	GLU
7	G	55	ILE
9	I	1029	ILE
9	I	1037	ILE

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Mol	Chain	Res	Type
9	I	1142	ILE
9	I	1151	THR
9	I	1161	VAL
9	I	1162	VAL
9	I	1172	GLU
9	I	1173	LEU
9	I	1206	SER
9	I	1208	ASP
9	I	1209	ASP
9	I	1222	ASP
9	I	1228	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (32) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	158	GLN
1	A	255	ASN
1	A	330	ASN
1	A	388	HIS
1	A	445	GLN
1	A	514	ASN
1	A	562	GLN
1	A	592	GLN
1	A	914	ASN
1	A	929	GLN
1	A	980	GLN
1	A	984	GLN
1	A	1036	ASN
1	A	1100	ASN
1	A	1197	ASN
1	A	1349	ASN
2	B	355	ASN
2	B	588	GLN
2	B	627	ASN
2	B	861	GLN
2	B	1067	ASN
2	B	1083	ASN
2	B	1112	GLN
2	B	1204	GLN
2	B	1220	GLN
2	B	1227	ASN
3	C	153	GLN

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Mol	Chain	Res	Type
3	C	183	HIS
3	C	233	GLN
3	C	353	ASN
5	E	69	ASN
9	I	1249	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 7 ligands modelled in this entry, 7 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.